

Patent claims

1. A method for fine machining a cylindrical inner surface, in particular a cylinder running surface (2), which has materials of different hardnesses in the axial direction, comprising the following steps:
 - pre-turning of the cylindrical inner surface,
 - with at least one softer area (6) of the cylindrical inner surface being pre-turned to a greater diameter than at least one harder area (4),
 - honing of at least the harder area (4) down to the diameter level of the softer area (6).
2. The method as claimed in claim 1, characterized in that the harder area (4) and the softer area (6) are finish-honed to a final dimension (8).
3. The method as claimed in claim 2, characterized in that a radial removal of material by the finish-honing is less than 10 μm .
4. The method as claimed in claim 2 or 3, characterized in that the harder area (4) and the softer area (6) are finish-honed by different honing stones.
5. The method as claimed in one of the preceding claims, characterized in that, after the honing of the harder area, turning grooves (18) or honing grooves remain in the softer area (6).
6. The method as claimed in one of the preceding claims, characterized in that, in a transitional area (16) between the softer area (6) and the harder area (4), the harder area (4) is pre-turned down to the diameter of the softer area (6).
7. The method as claimed in one of the preceding claims, characterized in that a subsequent chemical treatment of the surface takes place only in the harder area (4).